



## Effect of *Rhodiola rosea* Root Extract on Stress-Induced Gastric Ulcer in Rats

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**SUMMARY.** Stress can lead to stomach ulcers. Oxidative stress and inflammation are involved in the pathogenesis of stress ulcers. *Rhodiola rosea* root extract (RRE) has antistress, anxiolytic, antioxidant and anti-inflammatory effects. In this study, the effect of RRE on gastric ulcers induced by forced immobilization method (FIM) was investigated. Albino Wistar male rats were divided into healthy (HG), control (SC), stress+RRE (SRE) and stress+famotidine (SFM) groups. RRE was given to the rats' SRE group, and famotidine to the SFM group was administered orally. One hour after, the animals in the SRE, SFM and SC groups were subjected to stress with FIM for one hour once a day. This procedure continued for seven days. After this period, the animals were euthanized. Stomach tissues were examined macroscopically and biochemically. RRE reduced the number and area of stress-induced ulcers and biochemical changes in the gastric tissues of animals better than famotidine.

**RESUMEN.** El estrés puede provocar úlceras estomacales. El estrés oxidativo y la inflamación están involucrados en la patogenia de las úlceras por estrés. El extracto de raíz de *Rhodiola rosea* (RRE) tiene efectos antiestrés, ansiolíticos, antioxidantes y antiinflamatorios. En este estudio, se investigó el efecto de RRE en las úlceras gástricas inducidas por el método de inmovilización forzada (FIM). Las ratas macho albinas Wistar se dividieron en grupos sanos (HG), control (SC), estrés+RRE (SRE) y estrés+famotidina (SFM). Se administró RRE al grupo SRE de las ratas y se administró oralmente famotidina al grupo SFM. Una hora después, los animales de los grupos SRE, SFM y SC fueron sometidos a estrés con FIM durante una hora una vez al día. Este procedimiento continuó durante siete días. Después de este período, los animales fueron sacrificados. Los tejidos del estómago se examinaron macroscópicamente y bioquímicamente. RRE redujo el número y el área de las úlceras inducidas por el estrés y los cambios bioquímicos en los tejidos gástricos de los animales mejor que la famotidina.

**KEY WORDS:** famotidine, gastric ulcer, rats, *Rhodiola rosea* root extract, stress

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